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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,531	11/21/2003	Geir Ultveit Haugen	135271	3407

7590 11/29/2005

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EXAMINER	
JAWORSKI, FRANCIS J	

ART UNIT	PAPER NUMBER
3737	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,531	HAUGEN ET AL.	
	Examiner	Art Unit	
	Jaworski Francis J.	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Preamdt 1-23-04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11-21-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The disclosure is objected to because of the following informalities: Serial Nos. or Patent Nos. should be provided for the related applications listed in para [0001]; para [0007] " push " to -- has pushed --, " preprocess " to -- preprocessing --, para [0008] " system'" to -- systems --, para [0043] non-sequitur "into of " (blocks, regions?), para [0044] " response " to -- responds --.

Appropriate correction is required.

Claim Objections

Claim 10 is objected to because of the following informalities:typo line 3 " broad" to -- board --. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 4 and 20 – 23 are rejected under 35 U.S.C. 103(a) as obvious over Frasier (US6375617) in view of Miller et al (US6679849).which teaches in cols. 10-11 bridging a patch beamforming arrangement and method which includes signal processors coupled to a generally triangular receive aperture 202 of fig. 14 with multiplexed central triangular or staggered rectangular transmissions Fig. 15 such that the transmit and receive apertures are multiplexed during collection onto patch subarray scanhead beamformers. Whereas Frasier intimates that the transmit and received apertures may include shared elements it does not appear to be literally stated, whereupon it would have been nonetheless obvious in view of Miller et al Fig. 5B and col. 14 top portion that at least some of the same aperture elements may be connected to transmit and receive for sub-aperture processing since Miller et al like Frasier is concerned with volumetric scanning via efficient connections of large numbers of transducer elements.

Claims 5 – 20 and 24 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frasier in view of Miller et al alone as applied to claim1 above, or further in view of Petrofsky et al (US5573001). Since claim 5 for example does not

technically claim that the signal processor is concurrently connected across plural receive apertures, the former suffice insofar as the plural successive transmit or receive apertures would have been sequentially connected during advance of the volume scan, or the 'signal processor' may be interpreted to refer to the aggregate subarray processors collecting the data across the active apertures.. Alternatively since the former are silent as to the possibility of concurrent signal processor connection across apertures, Petrofsky et al appears to suggest in an alternative construct that subarrays may connect to more than one integrated circuit (board) if many channels are involved and one must merely have a consistent pattern for such overage connections, see col. 12 lines 40 – 53, a suggestion logically applicable to transmit as well as receive albeit Petrofsky is concerned with a receive sub-array beamformer only, and further suggest (for purposes of claim 10) that it is best to confine each circuit(board) in relation to a respective receive aperture (or transmit aperture as extended by argument supra). Since Fraser performs beamforming (across the elevation aperture) in the scanhead and (azimuthal multiline) beamforming in the ultrasound system the cabling necessarily connects between processing boards in the composite beamformer. Cabling may be provided by flex circuits 58, 58a in Miller et al.

US2005/0228277 A1 of ineffective date is cited as of general interest.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj

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Primary Exr
AU 3737